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Published to advance the Science of cold-blooded vertebrates

FISHES OF THE SALTON SEA.

Recently (May 7-14) I visited Salton Sea in southern California and, incidentally, obtained some information regarding the fishes of that interesting body of water.

As is well known, the Salton Sea was formed in 1905-6 by the breaking of a dike which permitted the water of the Colorado River to rush through into the Salton Sink, a vast area below sea-level. Although the break was finally gotten under control, and the lake began to dry up, it has, nevertheless, remained an enormous expanse of water. The depth varies considerably within the year, being greatest in the winter and least in the fall. The average depth for any one year is always somewhat less than that of the previous year. Considerable fresh water finds its way into the lake each year by seepage from the irrigation operations in Imperial Valley, so that the water is kept fresher than it otherwise would be.

When the water was flowing in through the break in the dike, some fishes were carried with it. At one time they were said to be very abundant. Just how abundant they were can not now be determined, nor do we know all the species represented. At the present time the following species are known to be in the lake:

1. Carp, *Cyprinus carpio*. This is undoubtedly the most abundant species. It probably escaped into the Colorado River from private fish ponds in Arizona. I saw several specimens, all of good size (3 to 10 pounds) at Cormorant Island.

2. Bony-tail, *Gila elegans*. Said to be not uncommon; I saw no specimens.

3. Humpback Sucker, *Xyrauchen cypho*. Rather common; I saw several specimens. They all had a starved appearance.

4. Colorado River Trout, *Salmo pleuriticus*. Although the water of the Salton Sea is quite brackish, strongly alkaline, and very warm, this trout seems to thrive in it amazingly well. It is said to be fairly common. I saw one fine example about 16 inches long. It was in excellent condition, albeit somewhat bleached in color.

5. Common mullet, *Mugil cephalus*. Next to the Carp, the most common species. Numerous examples were seen. It is said to reach a large size (as much as 6 pounds) and to be unusually fine as a food-fish.

6. Desert Cyprinodont, *Cyprinodon macularius*. This interesting little fish was found in Figtree John spring in a small oasis near the north end of the lake some 7 miles southwest of Mecca. This spring or water hole was grown up thickly with cattails (*Typha latifolia*) and the surface of the water was covered with a thick coating of algæ of various species. The water was only a few inches deep and quite warm, perhaps as warm as 90° to 100° on hot days. The fish, however, were active and apparently in good condition. I caught a number of them and succeeded in bringing two alive to San Francisco. One of them died a few days ago, the other is still alive and doing well.

This cyprinodont appears to be found in many of the isolated springs and water-holes in the deserts

of southern California. Only this week (June 1) Mr. Samuel Hubbard of Oakland, brought me 14 fine specimens of this species from Saratoga Springs, Death Valley, where Mr. Hubbard says they are very abundant.

BARTON WARREN EVERMANN,
San Francisco, Calif.

A COMPARISON OF ATLANTIC AND
PACIFIC SPECIMENS OF THE
HAMMER-HEAD SHARK,
SPHYRNA ZYGAENA.

In their review of the elasmobranchs of Japan, Jordan and Fowler (Proc. U. S. Natl. Mus., XXVI, 593, 1903) raise the question whether the hammer-head of the Pacific usually referred to *Sphyrna zygaena* is really identical with that species from the Atlantic. They say that specimens from the two regions need comparison.

I have recently made a detailed comparison of hammer-heads from the Atlantic and Pacific and found them absolutely similar, and this note is intended to record this fact.

The specimens examined were, one from Woods Hole, Mass., 60.5 cm. in length, and two from Japan respectively 51 and 56 cm. The three were found entirely similar in all characters that could be considered specifically diagnostic—such as, body proportions, shape and position of the fins, form and relative size of the “hammer,” and the size and position of the eye, mouth and gill area. The coloration only was a little different, the Woods Hole specimen being dark brown above while the Japanese ones were blackish gray. This, however, is not important since differences in coloration are not rare in fishes from widely separated localities, and besides, it may have been due to different preserving fluids having been used in the two cases.